

with part 111, subpart 111.60 of this chapter. A hot water supply boiler having a current rating of more than 48 amperes and employing resistance type heating elements must have the heating elements on subdivided circuits. Each subdivided load, except for an electric hot water supply boiler employing a resistance type immersion electric heating element, must not exceed 48 amperes, and it must be protected at not more than 60 amperes. An electric hot water supply boiler employing a resistance type immersion electric heating element may be subdivided into circuits not exceeding 120 amperes and protected at not more than 150 amperes. Overcurrent protection devices must comply with part 111, subpart 111.50 of this chapter.

(d) Heating elements must be insulated electrically from the water being heated, guarded against mechanical injury and contact with outside objects, and securely supported. Consideration must be given to sagging, opening, and other adverse conditions of the elements resulting from continuous heating, and flexion of supports and wiring due to alternate heating and cooling. Wrap-around elements must be secured in a manner which prevents loosening.

(e) Iron and steel parts must be protected against corrosion by enameling, galvanizing, or plating. Iron and steel storage tanks having a wall thickness less than 6.4mm (¼-inch) must have the inside surface protected against corrosion.

(f) Each heating element must have a temperature regulating device. The device must limit the water from obtaining a temperature greater than 90 °C (194 °F). If the control has a marked off position, the control must disconnect the heating element from all ungrounded conductors, and it must not respond to temperature when placed in the off position.

(g) An independent temperature limiting device must prevent the water in the upper 25 percent of the tank from attaining a temperature higher than 99 °C (210 °F). This device must require manual resetting, be trip free from the operating means, open all ungrounded power supply conductors to the heater, and be readily accessible.

(h) Electric hot water supply boilers must have pressure and temperature relieving valves. The valve temperature setting must not be more than 99 °C (210 °F). The pressure relief setting must not be higher than the marked working pressure of the boiler. The pressure and temperature relief valves must meet part 53, subpart 53.05 of this chapter. The pressure and temperature relief valves may be combined into a pressure-temperature relief valve.

(i) Electric hot water supply boilers must be marked in a visible location with the manufacturer's name, model or other identification number, water capacity, and the electrical ratings of each heating element. When two or more heating elements are installed, the maximum wattage or current consumption must be indicated. The cold water inlet and the hot water outlet must each be clearly distinguished or marked for identification purposes.

(j) All electric hot water supply boilers must have their pressure relief devices tested as required by part 52 or part 53 of this chapter, as applicable. Electric hot water supply boilers which meet the requirements of ANSI/UL 174 or ANSI/UL 1453 and have heating elements, temperature regulating controls, and temperature limiting controls are satisfactory for installation and service without further installation testing. All electric hot water supply boilers not meeting the requirements of ANSI/UL 174 or ANSI/UL 1453 must have their heating elements, temperature regulating controls, and temperature limiting controls tested by the marine inspector at the time of installation.

[CGD 88-057, 55 FR 24238, June 15, 1990, as amended by CGD 95-028, 62 FR 51202, Sept. 30, 1997]

#### § 63.25-5 Fired thermal fluid heaters.

(a) *Construction.* Fired thermal fluid heaters must meet the requirements of part 52 of this chapter, as applicable.

(b) *Controls.* Fired thermal fluid heaters must have a low fluid level cutout device or a low flow device. When the rate of fluid flow through the heating coils is insufficient to ensure proper heat transfer, the device must cut off the fuel supply to the burner. If the fluid temperature exceeds the designed

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maximum operating temperature, a high temperature limit device must cut off the fuel supply to the burner. These devices must be of the manual reset type.

### § 63.25-7 Exhaust gas boilers.

(a) *Construction.* An auxiliary exhaust gas boiler must meet the applicable construction requirements of part 52 or part 53 of this chapter as determined from § 54.01-5, Table 54.01-5(A) of this chapter.

(b) *Controls.* Each drum type exhaust gas steam boiler must have a feed water control system. The system must automatically supply the required amount of feed water and maintain it at the proper level. For boilers without a fixed water level, the control system must supply the feed water at a rate sufficient to ensure proper heat transfer. The system must adequately fill the boiler when cold.

(c) *Alarms.* When a condition arises which results in inadequate heat transfer, a high temperature alarm or low flow alarm must be activated. An audible alarm must automatically sound, and a visual indicator must indicate when the fluid temperature exceeds the maximum operating temperature or when the fluid/steam flowing through the heat exchanger is insufficient to ensure proper heat transfer. Additionally, an audible alarm must automatically sound, and a visual indicator must indicate when a soot fire is present in the exhaust gas boiler's uptake.

### § 63.25-9 Incinerators.

Incinerators installed on or after March 26, 1998 must meet the requirements of IMO resolution MEPC.59(33). Incinerators in compliance with ISO standard 13617 (1995), "Shipbuilding-Shipboard Incinerators-Requirements" are considered to meet the requirements of IMO resolution MEPC.59(33). Incinerators in compliance with both ASTM F 1323 (incorporated by reference, see § 63.05-1), "Standard Specifications for Shipboard Incinerators" and Annexes A1-A3 of IMO resolution MEPC.59(33) are considered to meet the

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requirements of IMO resolution MEPC.59(33).

[CGD 95-028, 62 FR 51202, Sept. 30, 1997, as amended by USCG-1999-5151, 64 FR 67181, Dec. 1, 1999]

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